

A Therapeutic Touch: The Impact of Hippotherapy on Children with Special Needs

An Honors Thesis (HONRS 499)

by

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Abstract

Through research and investigation, the author explored the history and benefits of hippotherapy on individuals with special needs. The researcher compared horse therapy to that of other forms of Animal Assisted Therapy, or AAT, defining the key differences between hippotherapy and therapeutic riding. With the use of observations and interviews, the author investigated the advantages of hippotherapy on a child with a developmental delay and moderate cognitive disability, and a child with autism. The researcher noted high interest levels, positive demeanors, and quick response rates while implementing hippotherapy strategies with students with special needs. While enrolled in SPCE 299X, a course on the Ball State University campus, the author had a chance to use knowledge of special education and AAT in order to plan for procedures used throughout the future Blackford County High Riding Art and Equestrian Camp.

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Background

"I love to ride. When I finish riding, my legs feel good and I can walk better" (Anderson, 2004, p. 32). At the age of twelve, Hunter Smith was already insightful to the improvements horse therapy treatments have made for his cerebral palsy. Each year, individuals with special needs use AAT as a way to complement occupational, physical, and speech-language therapy treatments. While the intensity of interest in AAT has increased over recent years, it is not a necessarily new phenomenon. "In Greek mythology, Chiron-a centaur was the first physician and the teacher of Aesculapius and could be considered the first pet therapist" (Beck and Katcher, 1983, p. 133). Since that time, pets have been part of therapy for patients dealing with physical, emotional, neurological, and cognitive disabilities. In 1867, dogs, cats, horses, birds, and even farm animals were used as treatment for individuals with epilepsy at Bethel, in Bielefeld Germany (Beck and Katcher, 1983). Today, these animals continue to be used in non-conventional therapy settings, with the most popular kind of AAT using dogs and horses.

Maridith Janssen (1998) found that the objective of AAT is to provide intervention in which an animal serves as a fundamental part of the treatment process. She reported that AAT must be instructed by a health or human-service provider, typically an Occupational Therapist, Physical Therapist, or Speech-Language Pathologist. Animal Assisted Therapy may be utilized in a number of settings, from institution to community, and is typically individual in nature. The Delta Society (1996) determined the sole goal of this form of therapy to be similar to what would be found in a clinical setting: to promote improvement in physical,

social, emotional, and/or cognitive functioning. The type and amount of AAT that an individual receives is dependent upon their strength and ability. For instance, students who have experienced emotional trauma, separation from loved ones, or school failure may use AAT to form adequate social relationships. In other cases, individuals with learning or physical disabilities may use AAT to specifically target cognitive or kinesthetic goals.

As discussed previously, AAT is used in association with speech-language, occupational, or physical therapy. The animal's primary function in each of these modes is to act as a bridge by which therapists can reach their patients. Beck and Katcher (1983, p. 129) have found that "they (animals) can even stimulate the patient to think by encouraging interest in learning more about the animal and by fostering an awareness of a part of nature or the immediate environment." In a speech setting, Beck and Katcher (1983) found that AAT increases the capacity, to which individuals can call forth speech. The patient may find it easier to move discussion from an animal and therapist to other people than through just a therapist. Regarding cognitive skills, animals have been used to increase communication and memory, proving effective in assisting with sequencing skills and attention tasks (Delta Society, 1996). When used with children with autism, AAT has calmed repetitive behaviors and enhanced social communication. Dr. Laurel Redefers and Dr. Joan Goodman designed a controlled study in which observers coded the behavior of children with autism. Coders compared behaviors when a child interacted with a therapist, and later with a therapist and animal. Beck

and Katcher's (1983) investigation of Redefer's research has found the following support:

The child was studied with his or her therapist for a prolonged period so that the investigators knew the behaviors were stable, and then the dog was introduced. Later after a series of sessions with the animal present, the therapy sessions were continued without the dog (p. 137).

Redefer explained that in the presence of the animal, the child exhibited more social behavior and less typical autistic behavior, such as swaying and flapping. The individual's social behavior was paired with increased verbal communication as well (Beck and Katcher, 1983, p. 137).

The fact that AAT has been successful is not remarkable at all. The authors of *Between Pets and People* (1983) have attributed the achievement of AAT to the "loving devotion, constant companionship, attentive eye, and uncritical ear" (p. 127) of pets. These characteristics are extremely reassuring, especially when individuals lack trust or comfort in the normal clinical environment.

While it has been met with some skepticism, AAT is slowly becoming part of the normal therapeutic process. The perceived risks and dangers of AAT are those that come into play with typical animal contact. While there is some risk associated with animal contact, such as animal bites, allergies, diseases transmitted by the animal, or falls, Janssen (1998) found that there is no indication that AAT programs are particularly dangerous. She found that there have been few reports of adverse effects. Research by Boris Levinson, has looked at AAT's reputation with medical professionals. Levinson mailed a questionnaire to a random sample of more than

400 members of the New York State Psychological Association. The results of the survey indicated that more than one-third had used animals with therapy, and more than 58 percent had actually recommended the use of animals for their patients. More than half of the polled medical professionals felt that animals could be used when treating children and adolescents with anxiety states, behavioral disorders, cognitive disabilities, depression, phobias, physical disabilities, schizophrenia, and uncommunicativeness (Beck and Katcher, 1983).

The cost of AAT is another characteristic that makes this form of treatment appealing. Janssen (1998) reported that incorporating an animal into physical, occupational, or speech-language therapy, typically does not require employing an additional health-care provider. Rather, therapists integrate the animals into the patient's already determined functional objectives. AAT treatments are also often reimbursable, as long as documentation is kept to support specific goals and outcomes. According to Shari Bernard, an Occupational Therapist at Baylor Rehabilitation Hospital, AAT, "has never been refused reimbursement" (Bernard, 1993). The expense of training animals to participate in AAT is also relatively affordable. A majority of therapy animals are privately owned; therefore, costs for training these animals are incurred by the owner. Bernard (1993) reported that this private cost is quickly made up due to the quick nature of AAT techniques.

"Probably the best-established use of animals in school and institutional settings is in riding programs for youngsters with disabilities" (Beck and Katcher, 1983, p. 149). Hippias, the Greek word for horses, lends itself as the root word for hippotherapy, the treatment with the help of a horse. Greg Borzo (2002) reported

that hippotherapy has been used in Europe for more than 50 years, and was introduced to the United States in the 1970s. As of 2002, the North American Riding for the Handicapped Association had accredited more than 150 riding centers, which provide hippotherapy treatment (Becker and Morton, 2002). What started as a treatment for students with physical disabilities, and cerebral palsy in particular, has now expanded as a form of therapy for clients with physical, psychological, cognitive, social, and behavioral problems. Hippotherapy produces a combination of sensory, motor, and neurological input that can be used to treat a wide variety of disabilities, including but not limited to, autism, cerebral palsy, Down Syndrome, developmental delay, learning disability, traumatic brain injury, genetic disorders, and Attention-Deficit Disorder (Children's TherAplay).

Historically, clients receiving hippotherapy have primarily been children; however, adults are also able to benefit from this form of treatment. Greg Borzo (2002) found that typically licensed hippotherapy centers recommend that the child be of at least 18 months to two years of age. This is due to the fact that children must have enough head and trunk control to be able to accommodate the horse's movement. There is no upper age limit for hippotherapy clients, as long as the treatment team is able to appropriately handle the individual's impairments. Most of the time, hippotherapy sessions occur on a weekly basis and last 30 to 60 minutes. The type of horse used during this treatment time depends on the age, size, and need of the patient (Borzo, 2002).

Hippotherapy has often been compared with that of its sister treatment, therapeutic riding. Contrary to popular belief, the therapeutic forms are separate

entities. Unlike therapeutic riding, which provides adapted recreational horseback lessons, hippotherapy serves as a mode of physical, occupational, and/or speech-language therapy. Clients do not learn how to ride a horse, but rather, use the horse's movement as a treatment tool. Hippotherapy sessions must be prescribed by a physician and delivered by a licensed Occupational Therapist, Physical Therapist, or Speech-Language Pathologist (Children's TherAplay). This therapist must be paired with a professional horse handler and specially screened and trained therapy horse. While riding horses must also be screened for appropriate temperament, the focus of hippotherapy is on the horses' gait, or body movement. In therapeutic riding, the patient can be taught in both group and individual format. With hippotherapy, the therapist has direct hands-on participation in a one-on-one manner (Children's TherAplay).

The movement involved with hippotherapy, known as equine movement, stems from the gait of the horse's stride. Each horse has a unique three-dimensional movement, whose rhythmic, cyclical actions work to improve the balance, coordination, strength, flexibility, muscle tone, and cognitive skills of riders (Borzo, 2002). Equine movements simulate a walking sensation, and therefore, generate similar responses in the patient. "Each time you take a step, your pelvis tilts a little higher, a bit sideways and forward, and then back" (Becker and Morton, 2002). This sequence creates a sensation that is unique for individuals with physical or neurological disabilities. It helps reacquaint clients with how their muscles are supposed to behave. While there are a number of machines that attempt to replicate this stimulation, equine movement is truly unique. Becker and Morton

(2002) have found that the pressure of the horse's hooves rouses riders' knees, hips, and spines. While repetition is a positive attribute for hippotherapy patients, the horse's actions are a sort of imperfect repetition, which challenges the riders' balance and stimulates their brains.

Marty Becker (2002) attributed the success of hippotherapy to the horse's ability to have a direct impact on an individuals' nervous system. The horse provides a support structure that with its variable movement can offer sensory input to the "vestibular, proprioceptive, tactile, and visual channels" (Bender and MacKenzie, 2008). Vestibular input, or the sense of movement in space, is affected by how the patient moves on the horse. The proprioceptive system is the sense of where the body is in relation to other body parts. According to the American Hippotherapy Association each time the horse takes a step; the force transmitted to the client provides him with proprioceptive input. The therapist and horse handler can control the way the horse or individual is moving in order to vary the input these systems receive.

The trained Occupational Therapist, Physical Therapist, or Speech-Language Pathologist is responsible for assessing an individual's response, and then altering the progression of treatment appropriately (Bender and MacKenzie, 2008). For instance, when working with a child who has very weak trunk muscles, the therapist may first select a slow rate of movement. Once the equine movement has facilitated the child's trunk muscles to begin working, the therapist may increase the movement to challenge trunk strength. Altering the movement of the child is also possible during a hippotherapy session. Therapists may choose for their patients to

sit in a specific position or face a particular direction in order to meet their individual needs. The therapist must alter her routine in order to benefit the child's experience while on the horse. As the certified therapist examines and adjusts the riders' position and movements, a horse handler leads the horse, and a volunteer walks beside the horse to ensure the client's safety (Bender and MacKenzie, 2008). The hippotherapy session therefore incorporates a ratio of 3 people to every rider and horse.

Just as AAT has experienced scrutiny, so has hippotherapy due to the unconventional setting and potential dangers. In traditional therapy, sessions take place in a standard clinical environment, where there is little risk involved. While this setting may be deemed safer, all of the discussed events take place outside of the clinic. The patient is expected to communicate directly with the therapist. With hippotherapy, the events discussed throughout the session take place with the horse.

According to Marilyn Sokoloff, a psychotherapist from the University of Florida, the "tactile nature of the therapy and the horse-to-human scale speeds things up dramatically" (Becker and Morton, 2002). Take the example of a client whose main focus is on trunk strength. In a standard physical, occupational, or speech therapy session, this individual may be asked to bounce on a therapy ball while completing various exercises. In hippotherapy, however, Bender and MacKenzie (2008) have reported that the child will experience 2,000 to 3,000 equine steps in a 30-minute treatment session; a great deal more than what could be replicated on the therapy ball in a traditional clinic setting. With this intensified

progress rate, and mutual relevance to physical, occupational, and speech therapy, hippotherapy has gained significant interest and reputation with individuals with special needs throughout the past decade.

Research Narrative

SECTION 1 – TITLE, PURPOSE OF THE STUDY, AND RATIONALE

- 1.1 Title.** A Therapeutic Touch: The Impact of Hippotherapy on Children with Special Needs
- 1.2 Purpose of the study.** The researcher will interview parents of children with special needs, in order to determine their beliefs of how hippotherapy has impacted their child. The researcher will observe children with special needs while they participate in horse therapy sessions, noting the child's demeanor.
- 1.3 Rationale.** The research will be used to gain first hand knowledge of how hippotherapy can impact a child with special needs. The research is not to test a hypothesis or prove the benefits of horse therapy; rather, it is to interview and observe populations affected by hippotherapy.

SECTION 2 – DESCRIPTION OF SUBJECT POPULATION

- 2.1 Number of subjects.** There will be four subjects utilized in this project.
- 2.2 Describe the subject population.** Two female, Caucasian mothers will be interviewed during the project. One mother is 30 years in age and the other is 42. Two children will be observed during the project, as this research pertains directly to the impact of hippotherapy on children with special needs. One child is a Caucasian male, eight years of age who utilizes occupational therapy and physical therapy. This child is severely autistic. The other child is a Caucasian female, five years of age, who utilizes occupational therapy and physical therapy. This child has a developmental disorder that creates developmental delays in both physical and mental growth.
- 2.3 Describe any specified inclusion/exclusion criteria.** The children observed in this study must participate in horse therapy sessions. Subjects dropping out of therapy sessions would no longer be observed for this project. The mothers interviewed in this study must observe their children during horse therapy sessions. Subjects failing to observe their children during a majority of therapy sessions would no longer be interviewed for this project.

SECTION 3 – SUBJECT RECRUITMENT

- 3.1 Describe the method of subject recruitment.** The mothers and children interviewed and observed for this project are volunteer subjects, utilizing horse therapy at Children's TherAplay in Carmel, Indiana. An administrative

and support staff member of Children's TherAplay contacted patient families to determine those interested.

SECTION 4 – METHODS AND PROCEDURES

4.1 Describe the methods and procedures to be used. The children will be observed throughout their hour-long hippotherapy session at Children's TherAplay in Carmel, Indiana. Each child will be observed during three hippotherapy sessions, leaving a week between each observation. The child will participate in their routine hippotherapy session with their regular occupational or physical therapist. The researcher will make no adaptations or interventions; rather the researcher will simply take notes regarding each child's demeanor and behavior throughout the hippotherapy period. The researcher will interview the mothers of each child participant following their respective hippotherapy sessions. This interview will take place at Children's TherAplay in Carmel, Indiana. Each mother will participate in one interview, lasting approximately fifteen to twenty minutes. A copy of the interview questions is attached, and a proposed timeline is as follows:

- March 17, 2011:
 - 4:00-5:00: Child A Observation
 - 5:00-6:00: Child B Observation
- March 24, 2011:
 - 4:00-5:00: Child A Observation
 - 5:00-6:00: Child B Observation
- March 31, 2011:
 - 4:00-5:00: Child A Observation
 - 5:00-6:00: Child B Observation
- April 7, 2011:
 - 5:00-5:15: Mother A Interview
 - 6:00-6:15: Mother B Interview

SECTION 5 – ANONYMITY/CONFIDENTIALITY OF DATA

5.1 Describe how data will be collected and stored. The researcher will collect data and store written notes in a locked file cabinet. These notes will be entered into a word document following the observation, and paper notes will be shredded immediately. No data will be used to support or refute a hypothesis; rather, data will simply be used to determine the child's demeanor and behavior throughout hippotherapy sessions. The data will remain confidential throughout the researching period. Observation and interview data with identifiable information will strictly be kept between the child, the child's mother, and the researcher. The data will be stored on the researcher's personal computer and will be retained until the end of the transcription process. Following this time, documents will be deleted off of

the researcher's personal computer. During the transcription process, pseudonyms will be implemented in order to keep identifiable information confidential.

SECTION 6 – POTENTIAL RISKS AND BENEFITS

- 6.1 Describe the potential risks and discomforts.** While participating in horse therapy may subject the rider to a number of physical and emotional risks, the project defined in this document involves a minimum number of risks. The children and mothers will not experience discomfort during observations and interviews greater than what is ordinarily encountered in daily life. The only anticipated risk from participating in this project is that the mothers may not feel comfortable answering some of the interview questions.
- 6.2 Describe how the risks will be minimized.** In order to reduce the risks of this project, interview questions will be written in layman terms. Questions will be written in an attempt to discover the impact of hippotherapy on children with special needs, rather than to open and discuss emotional topics and questions. Mothers will be informed that they may choose not to answer any interview question that makes them uncomfortable and that they may quit the study at any time.
- 6.3 Describe the potential benefits.** The benefits of this project will impact society, rather than the individual. By reading the interview and observation data, society will be able to gain a better understanding as to the personality and behavioral impacts of hippotherapy on children with special needs.

SECTION 7 – SUBJECT INCENTIVES/INDUCEMENTS TO PARTICIPATE

- 7.1 Describe any inducements/incentives to participate that will be offered to the subject.** N/A

SECTION 8 – OTHER FINANCIAL CONSIDERATIONS

- 8.1 Describe any financial expense to the subject.** N/A
- 8.2 Describe any provisions for compensation for research-related injury.** N/A

SECTION 9 – INFORMED CONSENT

- 9.1** The Informed Consent and Parental Permission documents are attached.

SECTION 10 – ADDITIONAL MATERIALS

10.1 The following are attached with this protocol:

- Informed Consent Documents (2)
- Parental Permission Documents (2)
- Letter of Permission from TherAplay

***The previous Narrative was created using the guidelines from the Institutional Review Board (2002). ***

Observations

Thursday, March 17, 2011

- Child A: The child began her hippotherapy session by riding forward on FairyTale, a mid-size pony with a small girth and gait. She was accompanied by a Physical Therapist, side-walker, and horse trainer, who initially led the horse in a wide circle around the arena. As she was riding, the Physical Therapist made changes to the child's posture, making sure to adequately align the hips and shoulders. While riding forwards, the therapist asked the child to reach for a toy, concentrating on the extension of arm and trunk muscles. The child was required to reach across her body, retrieving the toy with both her right and left arm. To finish the day, the child rode the horse in a "puppy-dog" fashion. She balanced herself on her hands and knees while riding forward in a circle, working on lifting her lower body.

At the beginning of riding, Child A had a difficult time centering her balance on the horse, and was unable to shift her own body to compensate for the horse's movement. As the session went on, however, Child A appeared to have an easier time maintaining her balance. While she vocalized her frustration toward reaching for the toy, she was able to stretch forward while sitting in the proper position on the horse. Unlike at the beginning of the session, the Physical Therapist rarely had to shift the child's weight during this exercise, as she remained centered on her own. When switching to "puppy-dog" style, Child A became very hesitant. She kept her hips and lower trunk close to the horse, failing to appropriately raise her lower body. The Physical Therapist had to intervene on a number of

occasions. By the end of the session, however, the child had made progress and was beginning to hold her hip muscles up on her own.

- Child B: The child began his hippotherapy session by riding sideways on Rocky, a large horse with a wide girth and large, strong gait. He was accompanied by an Occupational Therapist, side-walker, and horse trainer, who initially led the horse in a wide circle around the arena. Throughout the session, the horse trainer was instructed to change the direction of the horse, transitioning from a straight to weaving motion around the arena. The Occupational Therapist altered the position of the child, asking him to face forward and backward during the rest of the meeting. While on the horse, the child was asked simple life skills questions, such as “What did you do before going to school?” and “What did you eat for breakfast?”

During the session, Child B worked on linguistic and kinesthetic skills while riding. Maintaining a center of balance was a clear goal throughout the session. The child had a very easy time sitting in the correct position while walking in a circle, however, this changed when the horse trainer altered the direction of the equine movement. Child B shifted his weight throughout the “weaving” segment of the meeting. He appeared to have difficulty regaining proper posture when turning right, as it seemed demanding for the child to compensate with his left abdominal muscles. The child answered the Occupational Therapist’s life skills questions, however, he sometimes got off on a tangent talking about one particular event that had happened throughout the day.

Thursday, March 24, 2011

- Child A: Child A began her hippotherapy session by riding sideways on Tommy, a small horse with a thick girth and a smooth stride. She was accompanied by a Physical Therapist, side-walker, and horse trainer, who initially led the horse in large figure-8 motions around the arena. As she was riding, the Physical Therapist had the child reach for a toy in order to target trunk balance, and look at hand-eye coordination. The therapist asked the child to first center in on the toy with her eyes and then stretch and reach for the object. Child A was then instructed to face forward on the horse as the equine completed half-halts, forward movements that stop intermittently around the arena. The Physical Therapist utilized half-halts to strengthen the client's core muscles. The session ended with arm reaches again, however, the exercise was completed with the child sitting sideways as the horse walked around in a circle, rather than figure-8 motions.

Initially, the child had a very difficult time reaching for objects while sitting sideways on the horse. She was able to focus in on the target, but could not coordinate her arm movements and trunk balance to reach for the toy. Due to this difficulty, the Physical Therapist came back to this exercise at the end of the session. The second time it was attempted, the child had a much greater success rate at looking at the toy and appropriately reaching for the object. This exercise worked the client's core and side abdominal muscles. During the half-halt portion of the session, the child was able to

compensate for the staggered stops. By the end of this treatment, the child attempted to lean back when a stop occurred and then sit forward to readjust position.

- Child B: Child B began his hippotherapy session by riding forward on Pepsi, a mid-size horse, with an average girth, and an agitated gait. He was accompanied by an Occupational Therapist, side-walker, and horse trainer, who initially led the horse in a wide circle around the arena. Throughout the session, the child participated in a variety of linguistic exercises, repeating the days of the week and months of the year, while balancing himself on the horse. The client was then positioned sideways on the horse, as Pepsi completed half-halts. The side abdominal muscles were targeted during this exercise. The session ended with the client facing backward as the equine weaved around the arena.

A horse with an agitated gait was utilized during this session, in order to provide a larger challenge for the client. Balancing on an equine with a staggered movement provided greater resistance for the child's abdominal muscles. The child was able to combine the physical skill of balancing while responding appropriately to linguistic conversation. While sitting sideways on Pepsi, Client B had initial difficulty with half-halts. Finding his center of balance and remaining adequate in posture proved hard for the child, as he swayed during each intermittent stop. By the end of this exercise, however, it appeared as though the client had trained his side abdominal muscles to compensate for the stops. Swaying was lessened, and proper posture was

regained. Weaving around the arena, while facing backwards seemed relatively easy for the client. Child B appeared stationary in his stance, even as the horse changed direction.

Thursday, March 31, 2011

- Child A: The client began her hippotherapy session by riding forward on FairyTale, a mid-size pony with a small girth and gait. A Physical Therapist, side-walker, and horse trainer, who initially led the equine in a weaving pattern around the arena, accompanied her. During the beginning of the session, the therapist targeted abdominal strength and flexibility while holding onto and reaching for a pedometer. The child also participated in a balancing exercise, standing up on FairyTale as the equine walked in a circle around the arena. The session ended with Child A sitting backwards on the horse, as she half-halted. The child was asked to participate in the linguistic exercise of naming her family members while maintaining proper posture on the horse.

The child appeared to greatly enjoy holding onto the pedometer while balancing on the horse. Grasping the object while walking required the child to solely use her abdominal muscles to balance. Her hands and arms were occupied and could therefore, not be used to assist. For the most part, the child was able to maintain her center of balance while holding onto the object. Distraction with the pedometer buttons, however, did cause a higher level of posture interventions by the Physical Therapist. In order to regain

focus, the therapist had the child stand up on the horse while riding. The child seemed incredibly tentative, to hold onto the therapist and side-walker. Her core, arm, and leg muscles were all used to balance while standing on FairyTale. The child finished her session by participating in half-halts. She was able to recall names, such as “Mommy,” and “Daddy,” while sustaining her appropriate posture and center of balance on the horse.

- Child B: The client began his hippotherapy session by riding forward on Gideon, a large horse with an average size girth and staggered gait. An Occupational Therapist, side-walker, and horse trainer, who initially led the equine in a large circle around the arena, accompanied him. While riding forward, the Occupational Therapist asked the child to put his hands on his helmet. While applying this form of treatment, the therapist asked the child questions about his day at school. The child was then instructed to sit sideways, while the equine wove around the arena. Side abdominal muscles and linguistic conversation were again targeted throughout this exercise. Finally, the client sat “puppy-dog” style on the horse, using arm, leg, and core muscles to remain in the appropriate stance.

Child B had a very difficult time combining the arm exercise with linguistic concepts. Each time the child began to speak, he took his hands off of his helmet. There was an observed sense of hesitance toward this treatment, as the child showed reluctance to the vulnerability of keeping his arms above his head. As the exercise continued, the ease toward adjusting his posture without the use of his arms and hands increased. He was able to

shift his weight in order to compensate for the horse's movement. While sitting sideways, the child had a much easier time participating in conversation with the therapist. It also appeared as though he utilized side abdominal muscles to appropriately lean as the horse wove around the arena. Child B appeared very capable of keeping his lower hip muscles lifted while riding "puppy-dog" style on the horse. He used arm, leg, and core muscles to keep his back high and arched.

Interviews

A Therapeutic Touch: The Impact of Hippotherapy on Children with Special Needs

Interview: Mother A (personal communication, April 7, 2011)

1. How long has your child been participating in hippotherapy at TherAplay?

"I believe we started around two years ago. I think...September of 2009."

2. In what area have you seen the most improvement or growth in your child since beginning hippotherapy sessions at TherAplay?

"I think the best thing has been her general movement in the environment. She has better spatial awareness, and her jumping, pedaling, and running have all improved."

3. What changes have you seen in your child's overall demeanor and behavior since beginning hippotherapy sessions at TherAplay?

*"***** is always very excited to see the horses. She has such an enjoyment with it (hippotherapy) and has wonderful relationships with her therapists."*

4. Is your child participating in other forms of occupational therapy, physical therapy, or speech therapy? If so, how have the results from hippotherapy been different from that of the other forms of therapy?

*"She is also in speech therapy two hours a week at home. ***** also gets thirty minutes of occupational therapy and physical therapy at her kindergarten. This therapy is more routine than what you find at TherAplay"*

5. What does your child enjoy most about participating in horse therapy?

"Oh my goodness, she loves trotting on the horse and playing with the ball during therapy!"

6. What would you say has been the greatest benefit of the hippotherapy sessions at TherAplay?

*"Her balance has improved so much and her core muscles are so strong, which is something I don't think could be replicated in the clinical setting. ***** has a big interest in adventure, something that didn't start until she came to TherAplay."*

Interview

A Therapeutic Touch: The Impact of Hippotherapy on Children with Special Needs

Interview Questions: Mother B (personal communication, April 7, 2011)

1. How long has your child been participating in hippotherapy at TherAplay?

"Almost one year; we started last summer."

2. In what area have you seen the most improvement or growth in your child since beginning hippotherapy sessions at TherAplay?

*"Well definitely talking...***** talks all of the time! His conversation has really improved. I also like that he is so relaxed after coming (to TherAplay)."*

3. What changes have you seen in your child's overall demeanor and behavior since beginning hippotherapy sessions at TherAplay?

"Ok, well I guess I would say the same thing...he seems so relaxed after his therapy sessions. He is also more socially appropriate in his behaviors and conversation choice."

4. Is your child participating in other forms of occupational therapy, physical therapy, or speech therapy? If so, how have the results from hippotherapy been different from that of the other forms of therapy?

*"***** has speech and OT at school. He also has behavior therapy and music therapy once a week at home. With the exception of music therapy, TherAplay is much more creative and engaging than the other kinds."*

5. What does your child enjoy most about participating in horse therapy?

"He loves interacting with the horses! His favorite thing is to feed Rocky peppermints at the end of the session. I think he realizes that the horse is bigger than him and he can't control him."

6. What would you say has been the greatest benefit of the hippotherapy sessions at TherAplay?

"Definitely the way he interacts! He asks questions to get to know more and he is starting to realize that this is something bigger than just the little world he lives in."

Discussion

While the observations and interviews taken over the course of this project could not be used to form causality or quantitatively support a scientific hypothesis about hippotherapy, the qualitative data was used to discuss the effect equine movement had on the demeanor, attitude, and behavior of two children with special needs. As was described in the Research Narrative, Child A was a young girl, five years of age who had a developmental delay and mild cognitive disability. After talking with her mother, it was determined that this child had been participating in hippotherapy treatments at Children's TherAplay for a little more than one and one half years. Child B was a boy, eight years in age who had autism. Likewise, after speaking with his mother, it was determined that he had been participating in hippotherapy treatments at Children's TherAplay for approximately one year.

Although the children had varying reasons for utilizing physical and occupational therapy, they worked on two of the same goals: improving trunk strength, and balance. During each session, the researcher observed as the physical and occupational therapists used a range of exercises to target core muscles and equilibrium. Throughout the meetings, both children appeared to improve their response to treatments in which they had to reach for or hold onto a designated object. These exercises were often initially met with hesitance, yet proved successful by the end of the treatment. In Child A's case, this exercise was only ineffective when using the pedometer as the object toward which she was reaching. Distraction caused by the buttons on the pedometer could have been the reasoning behind the lack of focus and therefore, success of the overall treatment. Child B was

originally tentative about holding his hands on his head. The vulnerability of removing his arms and hands as a back-up source of balance heightened the client's level of uncertainty. As he completed each repetition of the exercise, however, Child B's strength and confidence appeared to significantly increase.

When comparing these exercises to those completed on a therapy ball or machine, equine treatments are quite unique. The child is not only targeting his core sense of balance and strength when reaching or holding onto an object, he is working with the uneven movement of the horse as well. While machines can be utilized to mimic this type of treatment, the movement is often even. The agitated gait of a horse, or uneven stopping and starting of a weaving or half-halt motion are movements that cannot easily be replicated. They challenge the child, allowing the child to train his muscles to compensate for both types of motion.

The linguistic behaviors of each child were also something to note during the observation period. While a Speech-Language Pathologist did not work directly with the clients at the TherAplay setting, exercises incorporated by the Physical Therapist and Occupational Therapist targeted verbal conversation and discussion. Child A had difficulty forming verbal responses, and nonverbal physical clues served as the key indicators of communication in the traditional setting. During the hippotherapy sessions, however, this child was able to use words when recalling names, and vocalized excitement and frustration by laughing or huffing while on the horse. As was noted in the previously, animal therapists have a large capacity to call forth speech (Beck and Katcher, 1983, p. 129). Notes taken during Child B's hippotherapy sessions also supported this observation. As a young boy with autism,

this client's mother noted that socially appropriate conversation was difficult in a traditional setting. While on the horse, however, Child B talked about his day, school assignments, and morning routines. It seemed as though the horse, when used as a bridge for communication, evoked a high level of verbal response and emotion from the children.

Both mothers noted that their children had an increased sense of awareness and responsiveness from the time that they began hippotherapy sessions at TherAplay. They talked more, showed greater level of emotion, and even demonstrated an appreciation for the world around them. The mothers also discussed their children's' heightened joy and excitement about coming to hippotherapy versus what had been seen in the clinical occupational, physical, or speech therapy environments. Beck and Katcher's research found that "...the animals improved the patients' responsiveness, offering them pleasure and enhancing the general milieu of the treatment setting" (1983, p. 135). The mothers reported that the horses served as objects of interest and excitement for their children. It was noted that when compared with the research of Beck and Katcher (1983) the observed positive demeanor could have enhanced the children's overall level of successful response.

Implementation

Upon selecting the topic for her Honors Thesis, the researcher became aware of an immersive learning project sponsored by her thesis supervisor, Dr. Ruth Jones. The author learned that by participating in a Ball State University immersive learning project, she would have the opportunity to collaboratively design and implement a day camp program for students with special needs. The Blackford County High Riding Art and Equestrian Day Camp would be implemented June 6-10, 2011. The program would be organized and run by Ball State University immersive learning students, Blackford County Schools, several nonprofit agencies, and various community volunteers. Activities including horseback riding, art experiences, and music and movement would also be incorporated into the weeklong camp. Due to the fact that this project would run in the summer, preliminary planning would take place during March, April, and May of the previous semester. After learning of camp details, the researcher decided to apply to participate in this immersive learning team.

Meetings for this project began shortly after the Ball State University's spring break, on March 23, 2011. The author was introduced to the planning team, which consisted of fifteen Ball State University students and six Blackford County School administrative and staff members. A number of students had had past experience showing and riding horses, an expertise that was essential for forming the foundation of this equestrian camp. Other group members came with background knowledge in special education, art, public relations, nursing, dance, music

education and communication. The diverse team created a wider range of abilities and therefore, allowed an increased level of ambition and achievement.

Initial necessities were set into place prior to the start of formal planning. A farm in Hartford City, Indiana was distinguished as the setting for this camp; and five to ten horses were selected as the equine masters for the week. These horses, while not specifically trained for hippotherapy, were chosen based on their calm demeanor and relatively smooth gaits. Due to the fact that no formal hippotherapy training was administered, the camp was set up based on therapeutic and recreational riding ideals. The transition from hippotherapy to therapeutic riding provided an additional, hands-on learning opportunity about AAT for the author. Hippotherapy knowledge about equine movement, formed through research and observation, was deemed helpful, however, throughout the planning process.

During planning sessions from March 23, 2011-April 6, 2011, Ball State University students studied “psychological, environmental, and cultural factors that contribute to mild and moderate disabilities” (Jones, 2011). Campers, living in Blackford County, between the ages of nine-eighteen with mild to moderate disabilities, would be considered for the High Riding Art and Equestrian Camp. The immersive learning team explored characteristics of students with mild to moderate disabilities, and looked specifically at characteristics of individuals with autism. Knowledge of how to interact with and support the campers was deemed the highest importance throughout the planning process and future camp experience.

Paperwork, such as consent forms, media releases, medical information, and emergency contact documents were also created throughout the planning process.

These files were fashioned according to confidentiality clauses and HIPPA laws. An introductory letter, welcoming future campers to the program was also created. A schedule of events was formatted during the planning sessions. It was decided that the students would be placed in four groups, dependent upon age and ability. Each group would participate in four extracurricular experiences throughout a camp day. Campers would attend an equestrian experience, arts, crafts and computers, music and movement, and physical education.

The majority of planning was designated to developing and preparing activities used within each section of the camp. Ball State University students were grouped according to interest level. The four groups laid out summarized lessons for each of the days, making sure to differentiate for the varied level of learners that would be participating in the camp. The students also formulated rain plans, remaining cautious of unexpected summer weather.

While the camp will not be implemented until June 6, 2011, there is a clear interest stemming from Blackford County students. The design of the camp has incorporated collaborative knowledge and ideas of Ball State University students, Blackford County school officials, and other community organizations. The camp will not provide hippotherapy treatments to its participants, however, each camper will have the opportunity to experience recreational riding and improve his or her equestrian skills. It is the hope that through The Blackford County High Riding Art and Equestrian Camp, students with mild to moderate disabilities will have a summer outlet that allows them to engage in creative extracurricular and social experiences.

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<http://cms.bsu.edu/About/AdministrativeOffices/BBC/Fellows/CurrentProjects.aspx>

IRB Informed Consent

Study Title A Therapeutic Touch: The Impact of Hippotherapy on Children with Special Needs

Study Purpose and Rationale

The purpose of this research project will be to gain first hand knowledge of how hippotherapy can impact a child with special needs. The research is not to test a hypothesis or prove the benefits of horse therapy; rather, it is to interview and observe populations affected by hippotherapy. The researcher will interview parents of children with special needs, in order to determine their beliefs of how hippotherapy has impacted their child. The researcher will observe children with special needs while they participate in horse therapy sessions, noting the child's demeanor and behavior.

Inclusion/Exclusion Criteria

To be eligible to participate in this study, you must observe your child during a majority of his or her hippotherapy sessions at Children's TherAplay.

Participation Procedures and Duration

For this project, you will be interviewed following your child's hippotherapy sessions. This interview will take place at Children's TherAplay in Carmel, Indiana. You will participate in one interview, lasting approximately fifteen to twenty minutes.

Data Confidentiality or Anonymity

All data will remain confidential throughout the researching period. Observation and interview data with identifiable information will strictly be kept between yourself and the researcher. During the transcription process, pseudonyms will be implemented in order to keep identifiable information confidential.

Storage of Data

The researcher will collect interview notes and store written material in a locked file cabinet. These notes will be entered into a word document following the interview, and paper notes will be shredded immediately. The data will be stored on the researcher's personal computer and will be retained until the end of the transcription process. Following this time, documents will be deleted off of the researcher's personal computer.

Risks or Discomforts

The only anticipated risk from participating in this study is that you may not feel comfortable answering some of the interview questions. You may choose not to answer any question that makes you uncomfortable.

Benefits

There are no perceived individual benefits for participating in this study. The benefits of this project will impact society, rather than the individual. By reading the interview and observation data, society will be able to gain a better understanding as to the personality and behavioral impacts of hippotherapy on children with special needs.

Voluntary Participation

Your participation in this study is completely voluntary and you are free to withdraw your permission at anytime for any reason without penalty or prejudice from the investigator. Please feel free to ask any questions of the investigator before signing this form and at any time during the study.

IRB Contact Information

For one's rights as a research subject, you may contact the following: For questions about your rights as a research subject, please contact the Director, Office of Research Compliance, Ball State University, Muncie, IN 47306, (765) 285-5070 or at irb@bsu.edu.

Study Title A Therapeutic Touch: The Impact of Hippotherapy on Children with Special Needs

Consent

I, _____, agree to participate in this research project entitled, "A Therapeutic Touch: The Impact of Hippotherapy on Children with Special Needs." I have had the study explained to me and my questions have been answered to my satisfaction. I have read the description of this project and give my consent to participate. I understand that I will receive a copy of this informed consent form to keep for future reference.

To the best of my knowledge, I meet the inclusion/exclusion criteria for participation (described on the previous page) in

Participant's Signature

Date

Researcher Contact Information

Principal Investigator:

Elizabeth Burkholder, Undergraduate Student
Special Education
Ball State University
Muncie, IN 47306
Telephone: (317) 750-9571
Email: eiburkholder@bsu.edu

Faculty Supervisor:

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For this study, your child will be observed during five hippotherapy sessions, leaving a week between each observation. Your child will participate in their routine hippotherapy session with their regular occupational therapist. No adaptations or interventions will be made by the researcher; rather the researcher will simply take notes regarding your child's demeanor and behavior throughout the hippotherapy period.

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Parent's Signature

Date

Child Assent

The research project has been explained to me and I have had the opportunity to ask questions. I understand what I am being asked to do as a participant. I agree to participate in the research.

Child's Signature

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Children's TherAplay Foundation, Inc.

February 24, 2011

Institutional Review Board
2100 West Riverside Avenue
Muncie, IN 47306

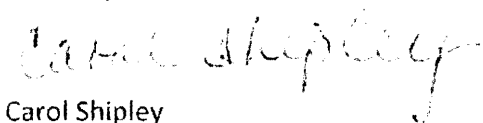
To Whom It May Concern:

The Children's TherAplay Foundation, Inc. is a non-profit outpatient rehabilitation clinic for children with special needs. Our talented team incorporates the movement of horses as a treatment tool into physical and occupational therapy sessions. We are located in Carmel, IN.

TherAplay welcomes the opportunity to provide instruction and education to a diverse group of students from colleges and universities around the country. In that regard we are pleased to have Elizabeth Burkholder represent Ball State University in her studies for her Honor's Thesis. Elizabeth will be observing occupational and physical therapy sessions for our special needs patients in the clinic and on horseback. She has completed all the necessary paperwork required by TherAplay and BSU. Two of our TherAplay families have agreed to be interviewed by Elizabeth for her study and she will be observing their children. We are pleased to provide the setting for these sessions.

If you are interested in further information on our organization please visit our web site at childrenstheraplay.org. We're happy to be a part of this learning experience for Elizabeth.

Sincerely,



Carol Shipley

Interim Director

carol.shipley@childrenstheraplay.org

317 872-4166

CITI Collaborative Institutional Training Initiative

Social & Behavioral Research - Basic/Refresher Curriculum Completion Report Printed on 2/7/2011

Learner: Elizabeth Burkholder (username: ejburkholder)

Institution: Ball State University

Contact Information 13904 Springmill Ponds Circle
13904 Springmill Ponds Circle
Carmel, IN 46032 United States
Department: Special Education
Phone: 317-750-9571
Email: ejburkholder@bsu.edu

Social & Behavioral Research - Basic/Refresher: Choose this group to satisfy CITI training requirements for Investigators and staff involved primarily in Social/Behavioral Research with human subjects.

Stage 1. Basic Course Passed on 02/07/11 (Ref # 5591072)

Required Modules	Date Completed	Score
Belmont Report and CITI Course Introduction	02/06/11	3/3 (100%)
Students in Research - SBR	02/06/11	8/10 (80%)
History and Ethical Principles - SBR	02/06/11	3/4 (75%)
Defining Research with Human Subjects - SBR	02/06/11	5/5 (100%)
The Regulations and The Social and Behavioral Sciences - SBR	02/06/11	5/5 (100%)
Assessing Risk in Social and Behavioral Sciences - SBR	02/06/11	4/5 (80%)
Informed Consent - SBR	02/06/11	5/5 (100%)
Privacy and Confidentiality - SBR	02/06/11	5/5 (100%)
Research with Prisoners - SBR	02/06/11	3/4 (75%)
Research with Children - SBR	02/07/11	3/4 (75%)
Research in Public Elementary and Secondary Schools - SBR	02/07/11	4/4 (100%)
International Research - SBR	02/07/11	2/3 (67%)
Internet Research - SBR	02/07/11	4/4 (100%)
Research and HIPAA Privacy Protections	02/07/11	7/11 (64%)
Workers as Research Subjects-A Vulnerable Population	02/07/11	4/4 (100%)
Conflicts of Interest in Research Involving Human Subjects	02/07/11	1/2 (50%)
Ball State University	02/07/11	no quiz

For this Completion Report to be valid, the learner listed above must be affiliated with a CITI participating institution. Falsified information and unauthorized use of the CITI course site is unethical, and may be considered scientific misconduct by your institution.

Paul Braunschweiger Ph.D.
Professor, University of Miami
Director Office of Research Education
CITI Course Coordinator

[Return](#)

BALL STATE UNIVERSITY • INSTITUTIONAL REVIEW BOARD

HUMAN SUBJECTS RESEARCH APPLICATION

Protocol title: A Therapeutic Touch: The Impact of Hippotherapy on Children with Special Needs

Proposed project dates: begin: 2/24/11 end: 4/7/11

Principal Investigator: Elizabeth Burkholder E-mail: eiburkholder@bsu.edu

Department: Special Education Telephone: 317-750-9571

(check all that apply) ☐ Faculty/Staff ☐ Graduate student ☒ Undergraduate student ☐ Unaffiliated

(If the PI is a student researcher or not affiliated with Ball State University, a Faculty Sponsor must be listed below.)

Faculty Sponsor: Ruth Jones E-mail: reiones@bsu.edu

Department: Special Education Telephone: 765-285-5704

If this project is funded or if the investigator is seeking funding, list the agency(s) and/or sources.

(If the title of the grant application differs from the title of the IRB protocol, also specify the grant application title.)

To comply with the federally-mandated educational requirement, you (and all Key Personnel for this project – including the faculty advisor/sponsor) must have completed the online tutorial on the protection of human subjects. A copy of the computer-generated certificate indicating your successful completion of this tutorial must either be uploaded with this application or be on record in the Office of Academic Research and Sponsored Programs.

Have you and all Key Personnel completed this online tutorial?

☒ Yes

☐ No

Principal Investigator Assurance Statement

I have read and understand Ball State University's "Policy for the Protection of Human Subjects in Research" as stated in the *Faculty and Professional Personnel Handbook*, and I agree:

- a) to accept responsibility for the scientific and ethical conduct of this research study,
- b) to obtain IRB approval prior to revising or altering the research protocol or the approved Informed Consent text, and
- c) to report immediately to the IRB any serious adverse events and/or unanticipated problems which occur as a result of this study.

The Principal Investigator must electronically sign this study prior to submitting the protocol to the IRB for review. When you sign this study as the Principal Investigator, you are also agreeing to the terms in the Principal Investigator Assurance Statement above.

BALL STATE UNIVERSITY • INSTITUTIONAL REVIEW BOARD

Faculty Sponsor Assurance Statement

As the Faculty Sponsor for this study, I certify that I have reviewed this protocol and affirm the merit of this research project and the competency of the investigator(s) to conduct the project. My involvement in this study is as follows (check one option):

- ☐ I will be involved in this project. My name is listed and my responsibilities (described in the Key Personnel section) include supervision and oversight of this project.
- ☒ I will be involved in this project. My name is listed and my responsibilities (described in the Key Personnel section) in this project are limited (e.g., data analysis only). I affirm that this investigator has the competency to conduct this research study without my supervision or that of any other faculty or staff member of Ball State University.
- ☐ I will not be involved in any aspect of this project (including data collection). However, I have reviewed this protocol and the investigator's research experience and expertise. I affirm that this investigator has the competency to conduct this research study without my supervision or that of any other faculty or staff member of Ball State University.

A Faculty Sponsor must electronically sign this study for all student research projects and for all persons not affiliated with Ball State University before the protocol is submitted to the IRB for review. When you sign this study as the Faculty Sponsor, you are also agreeing to the terms in the Faculty Sponsor Assurance Statement above and accepting responsibility for ensuring that the terms of the Principal Investigator Assurance Statement are met.

Key Personnel

List all persons, other than the PI, who will have a role in the research project (refer to an attachment if necessary):

Name:	<u>Ruth Jones</u>	Faculty/Staff
Department:	<u>Special Education</u>	
Responsibilities:	<u>Provide assistance to questions of PI</u>	
Name:		
Department:		
Responsibilities:		
Name:		
Department:		
Responsibilities:		
Name:		
Department:		
Responsibilities:		

BALL STATE UNIVERSITY • INSTITUTIONAL REVIEW BOARD

Subject Population

Check all categories that apply to the subjects:

- | | |
|--|---|
| <input checked="" type="checkbox"/> Cognitively impaired | <input type="checkbox"/> Pregnant women |
| <input checked="" type="checkbox"/> Minors (individual under age 18 years) | <input type="checkbox"/> Prisoners |
| <input type="checkbox"/> Normal healthy volunteers | <input type="checkbox"/> Students |
| <input type="checkbox"/> Patients/clients | <input type="checkbox"/> Student athletes |
| <input type="checkbox"/> Other, explain: _____ | |

Will information pertaining to the research be withheld from subjects (incomplete disclosure/deception)? ☐ Yes ☒ No
 If yes, for what purpose? _____

List the location(s) where the research will be conducted: Children's TherAplay 9919 Towne Rd. Carmel, IN 46032

If advertisements will be used to recruit subjects, indicate the format(s) to be used:

- | | |
|--|---|
| <input type="checkbox"/> Flyer | <input type="checkbox"/> Radio |
| <input type="checkbox"/> Newspaper | <input type="checkbox"/> Television (e.g., public access channel) |
| <input type="checkbox"/> Electronic media, describe: _____ | |
| <input type="checkbox"/> Other, describe: _____ | |

Collaborators and Permissions

If any part of the research is to be conducted at another institution with a collaborator, provide the following information for the research collaborator:

Name: _____
 Title: _____
 E-mail: _____ Telephone: _____
 Address: _____

If any part of the research is to be conducted at an institution, or in conjunction with another organization, other than Ball State University, provide the name and contact information for a person who is authorized to give permission to conduct the research. Generally, this will be the person who would write a letter of permission to conduct the research.

Name: Carol Shipley
 Title: Administrative and Support Staff of The Children's TherAplay Foundation
 E-mail: rship13@gmail.com Telephone: 317-872-4166
 Address: 9919 Towne Rd. Carmel, IN 46032

IRBNet ID: 209102-2

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Welcome to IRBNet
Elizabeth Burkholder

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Other Tools

Forms and Templates

[209102-2] A Therapeutic Touch: The Impact of Hippotherapy on Children with Special Needs

You have Full access to this project.

Research Institution Ball State University, Muncie, IN

Title A Therapeutic Touch: The Impact of Hippotherapy on Children with Special Needs

Principal Investigator Burkholder, Elizabeth

Status Approved

Lock Status Locked - Revisions Complete

Sponsor Ruth Jones

The documents for this project can be accessed from the Designer.

Submitted to:

Ball State University IRB 02/26/2011 Approved 03/16/2011. Review details.

The previous package (209102-1) has a status of Tabled without Action.

Shared with the following IRBNet users

IRBNet User	Organization	Access Type
Elizabeth Burkholder	Ball State University, Muncie, IN	Full
Ruth Jones	Ball State University, Muncie, IN	Full